Effective Disinfection

• On average, patients are quarantined for 12 days, considering the 3-day overlap period at opening and the 10-day minimum quarantine period. This results in a turnover rate of 18 days.

Autonomous Mobile System

• The base of the robot is an omnidirectional vehicle capable of payloads up to 200 kg.
• The base has integrated sensors such as LiDAR, 3D cameras, collision sensors, and IMUs to perform autonomous navigation through SLAM. The sensors also enable failsafe operation and error correction.
• The UVC lamps on the robot are 254nm tubes in a housing with antimicrobial coating.

SAFETY GUIDELINES

Because the COVID-19 virus (SARS-CoV-2) is so new, the scientific community doesn’t yet have a specific deactivation dosage. However, the dosage values for comparable viruses in the same SARS virus family are 10-20 mJ/cm² using direct UVC light at a wavelength of 254 nm; this dosage will achieve 99.9% disinfection (i.e., inactivation) under controlled lab conditions. In real-life, the virus is often hidden or shaded from direct UVC light, reducing UVC’s effectiveness.

• UV-C dosage from the tower used in this robot is shown in the figure above. According to CDC guidelines the dosage must be less 20 mJ/cm² and the wavelength of 280 nm. The operator must also wear proper PPE while operating.

PEOPLE RESPONSIBLE

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